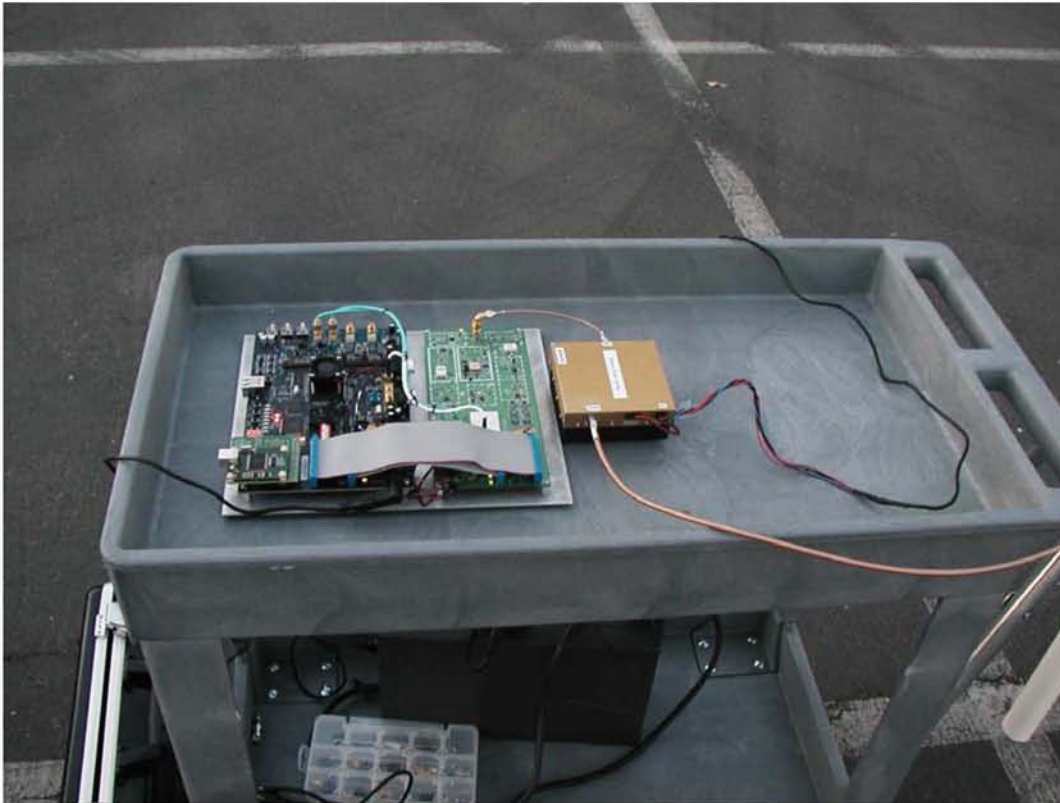


# Adaptrum Wireless Microphone Beacon Demonstration System

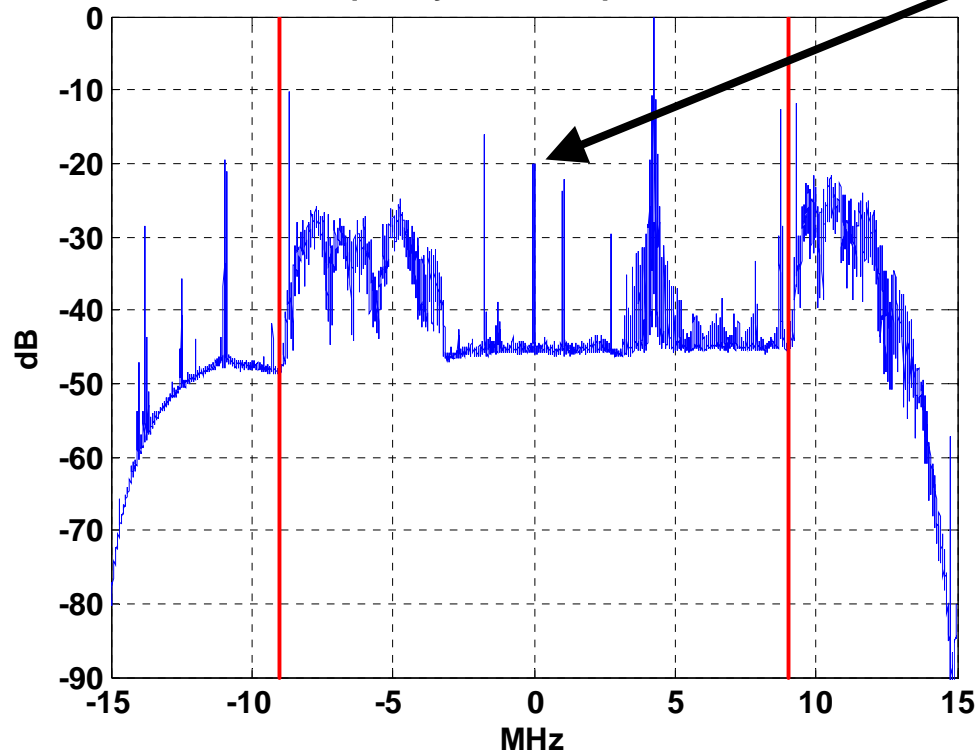
- Beacon transmitter
  - Additional beacon transmitter hardware unit
  - Three-tone beacon waveform
    - Real system may use other waveforms
  - 0.5 W output power with external amplifier
  - Transmission performed on Channel 25 (539 MHz) under FCC experimental license STA 0241-EX-ST-2008
- Beacon receiver
  - Same white space hardware
  - Software upgrade to allow beacon detection
  - Simulated AWGN false detection rate 0.001 at threshold used

# Beacon transmitter setup

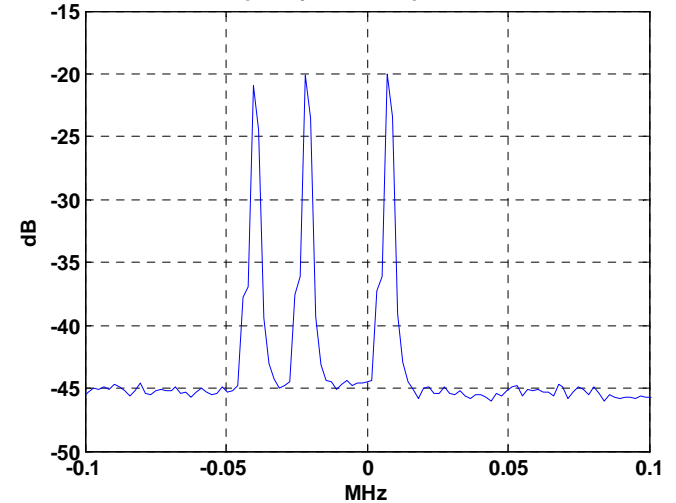


# Example measured beacon signal

Channel 25, center frequency 539 MHz, passband 530 MHz to 548MHz



Channel 25, center frequency 539 MHz, passband 530 MHz to 548MHz



# Wireless microphone system used in the coexistence measurement



# Wireless microphone channels used in the coexistence measurement



## PGX Wireless Frequency and Channel Guide

H6: 524.000—542.000 MHz

CH	Freq	CH	Freq	CH	Freq	CH	Freq	CH	Freq	CH	Freq	CH	Freq	CH	Freq	CH	Freq	CH	Freq
1	524.250	11	524.525	21	524.175	31	524.225	41	525.850	51	525.925	61	525.500	71	525.450	81	524.125	91	524.650
2	527.350	12	527.625	22	525.650	32	525.700	42	528.600	52	528.675	62	527.800	72	527.750	82	525.600	92	525.850
3	529.425	13	529.700	23	526.775	33	526.825	43	530.300	53	530.375	63	531.700	73	531.650	83	526.725	93	527.950
4	530.900	14	531.175	24	528.425	34	528.475	44	531.700	54	531.775	64	533.825	74	533.775	84	528.375	94	529.750
5	533.275	15	533.550	25	529.725	35	529.775	45	532.800	55	532.875	65	536.275	75	536.225	85	529.675	95	536.325
6	535.050	16	535.325	26	532.175	36	532.225	46	534.350	56	534.425	66	537.575	76	537.525	86	536.250	96	537.625
7	538.300	17	538.575	27	534.300	37	534.350	47	535.600	57	535.675	67	539.225	77	539.175	87	538.050	97	539.275
8	539.500	18	539.775	28	538.200	38	538.250	48	539.200	58	539.275	68	540.350	78	540.300	88	540.150	98	540.400
9	541.125	19	541.400	29	540.500	39	540.550	49	541.525	59	541.600	69	541.825	79	541.775	89	541.350	99	541.875
Full range. Even distribution in US TV channels 23, 24, and 25		Full range. Even distribution in US TV channels 23, 24, and 25		Full range. Max # of frequencies in US TV channel 23.		Full range. Max # of frequencies in US TV channel 23.		Full range. Max # of frequencies in US TV channel 24.		Full range. Max # of frequencies in US TV channel 24.		Full range. Max # of frequencies in US TV channel 25.		Full range. Max # of frequencies in US TV channel 25.		Full range. Max # of frequencies in US TV channels 23 and 25.		Full range. Max # of frequencies in US TV channels 23 and 25.	



# Beacon coexistence measurement aerial view

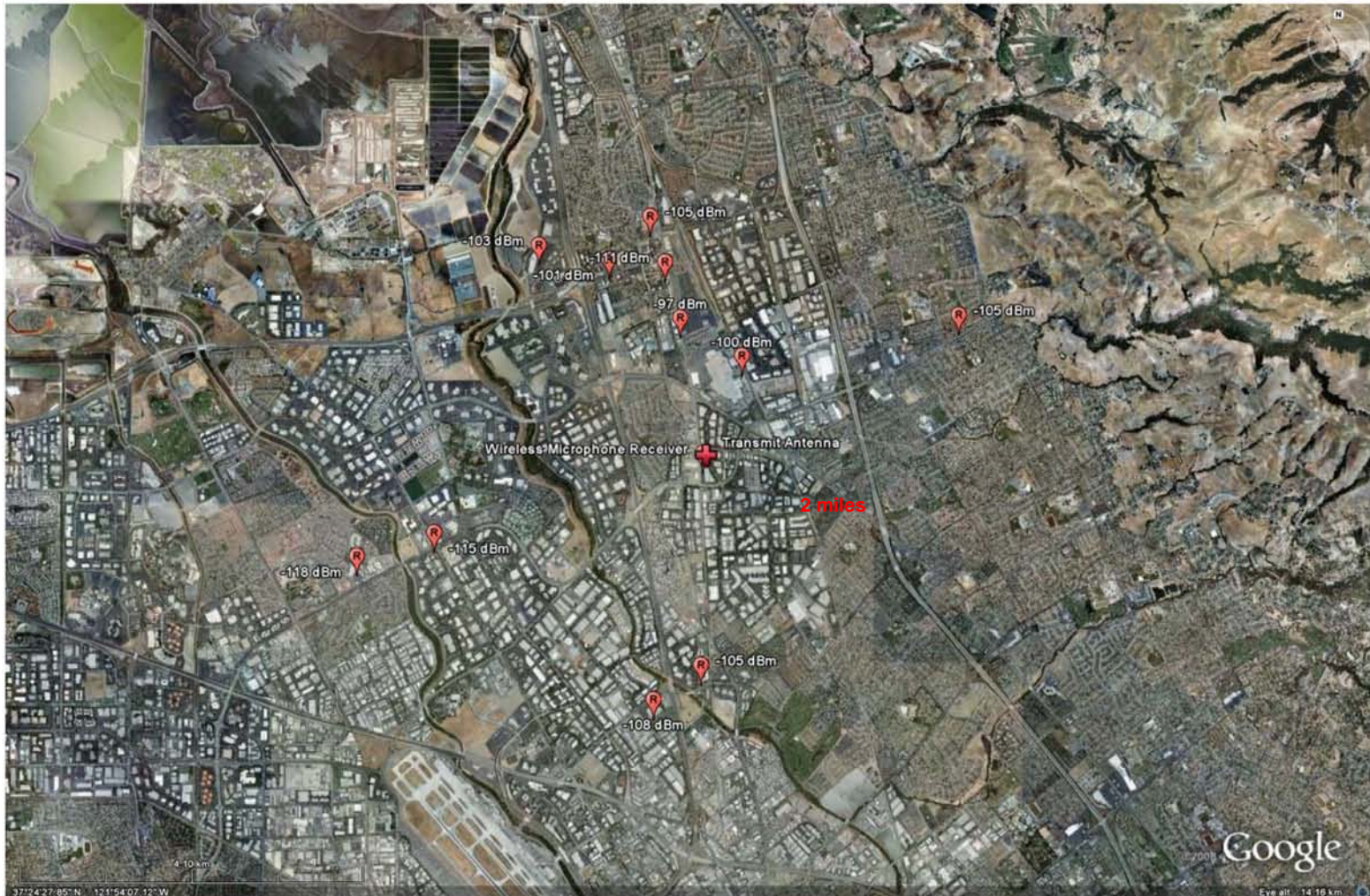


# Beacon range measurement receiver setup





# Beacon range measurement aerial view/results





# Conclusion

- Wireless microphone beacon system with a simple three-tone beacon tested
- Beacon system coexists smoothly with a typical wireless microphone system (Shure PGX24PG58 Channel H6)
- With an elevated transmit antenna (40 feet), consistent beacon detection observed within 2 miles radius from the transmitter in urban environment
- No false detection is observed throughout measurements